

Laboratory Certification & KPDES Permitting



To Protect and Enhance Kentucky's Environment

Laboratory Certification Overview

- Kentucky's Laboratory Certification Section is part of the Drinking Water Branch within the Division of Water and works closely with KPDES permitting and drinking water compliance sections.
- Laboratories performing wastewater compliance and drinking water analysis are required to be certified by Kentucky.
- Each certified laboratory must have a current certificate accompanied by their method-analyte list (scope of approved testing).
- Laboratory Certification Section's webpage is located at:

<https://eec.ky.gov/Environmental-Protection/Water/PermitCert/LabCert/Pages/default.aspx>



Selecting a Kentucky Certified Laboratory

- KPDES compliance samples must be analyzed by a Kentucky certified laboratory (401 KAR 5:320) – ask for a copy of their certificate + list
- When contracting with a certified laboratory, make sure to ask the following questions:
 - Is your laboratory certified by Kentucky for the parameter (analyte) requested, using an approved reference method?
 - Is the parameter analysis reporting limit (i.e. minimum reporting level) capable of reporting down to any KPDES required concentration?
 - If your laboratory does not analyze for a specific parameter – do you intend to subcontract that analysis? If yes, you must use a Kentucky certified laboratory for that specific parameter.
 - Are sample results maintained by laboratory for 5 years?



Detection & Reporting Limit Terms

- **MDL** – Method Detection Limit = an analyte is detected (as present) by a specific test method 99% of the time.
- **MRL** – Minimum Reporting Level = not only is the analyte detected by the test method, the concentration is also determined with a high level of accuracy. These results are also reproducible (accurate and precise).
- **Action Limit** = Program or permit specific analyte concentration (or derived term) used for compliance purposes.

Ideally, $MDL < MRL < \text{Action Limit}$. This allows the permitted facility and data user to determine compliance of the regulation or permit.



Determining Permit Limits

- Use of MDL - applications where “detection” with an associated concentration containing large errors and minimal quality assurance / quality control is acceptable [is it present?]
- Use of MRL – applications where “quantification” with known error and sufficient quality assurance / quality control is required [how much of it is present?]



Selection of Appropriate Testing Methods

- EPA has amended the language below – to ensure appropriate test methods are used for NPDES (KPDES) compliance samples.
- The purpose of this amendment is to clarify that NPDES applicants and permittees must use analytical methods that are capable of detecting and measuring the pollutants at, or below, the respective water quality criteria or permit limits.
- “Detecting” = MDL \leftrightarrow MRL (“J”; estimated)
- “Measuring” = requires a standard at \leq MRL



Failure to use a sufficiently sensitive method

- Not all testing methods can achieve the same level of sensitivity (which is simply the lowest concentration reporting level, MRL, which can be accurately determined and reported).
- Permitted facilities must communicate the permit specified reporting level (or limit) to their contract laboratories – this will help ensure that all efforts are taken by the laboratory to meet the intended use.
- Compliance samples that require dilution by the laboratory (due to interferences, turbidity, etc.) will have an elevated reporting level.
- Every effort must be taken to report analyte concentrations that are at, or below, the permit/regulation specified required values.



Wrap Up & Take Away

- Facilities are regulated by KPDES.
- Laboratories are certified by DOW/LabCert.
- Facilities and laboratories must stay in communication with each other
 - Facilities must verify laboratory is certified – request copy of certificate & list
 - Communicate type(s) of samples (matrix) and intended program (KPDES)
 - Communicate all necessary reporting limits from permit to laboratory (give laboratory a copy of the actual permit or applicable pages)
 - Ensure samples are collected properly, generate a chain of custody and use wet ice during shipping or delivery to laboratory
 - Laboratory must maintain documents for 5 years, facilities for 3 years
 - Avoid sampling near or at the end of a compliance period – in case resampling is necessary or it stops raining



Contact Information

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